

CLAIMS

1. A method for fabricating a composite laminate part comprising the steps consisting in:

- coating at least one side of a steel sheet of which the thickness E_a is less than 0.65 mm with one or more adhesive polymer films of which the total thickness E_p is equal to or greater than 0.1 mm to form a composite laminate steel sheet having a thickness E , according to which $E = E_a + E_p$,
- optionally, cutting said sheet to form a blank, and then
- forming the composite laminate sheet or sheet blank by drawing to obtain said composite part, the drawing being carried out in a drawing tool comprising a punch, a die and a blank holder, by adjusting the value of the material passage P_m between the punch and the die, so that :

20 $E - 0.80 \times E_p \leq P_m \leq E.$

2. The method as claimed in claim 1, wherein the composite laminate sheet or sheet blank is drawn by applying the punch directly to the side of the sheet or 25 the sheet blank that is coated with the adhesive polymer film.

3. The method as claimed in claim 1, wherein the composite laminate sheet or sheet blank is drawn by 30 applying the punch directly to the side of the sheet or the sheet blank that is not coated with the adhesive polymer film.

4. The method as claimed in any one of claims 1 to 35 3, wherein the thickness E_a of the steel sheet is less than 0.5 mm.

5. The method as claimed in any one of claims 1 to 4, wherein the thickness E_p of the adhesive polymer film is greater than 0.2 mm.

5 6. The method as claimed in any one of claims 1 to 5, wherein the total thickness E of the composite laminate steel sheet is between 0.3 and 1.2 mm.

10 7. The method as claimed in any one of claims 1 to 6, wherein the polymer film is directly extruded onto the sheet.

15 8. The method as claimed in any one of claims 1 to 6, wherein the polymer film is formed beforehand, before being applied to the steel sheet by hot lamination or by bonding using an adhesive.

20 9. The method as claimed in any one of claims 1 to 8, wherein the polymer of the adhesive film is a thermoplastic polymer.

10. The method as claimed in claim 9, wherein the thermoplastic polymer is selected from polyolefins, polyesters, polyamides and blends thereof.

25 11. The method as claimed in either of claims 9 and 10, wherein the polymer is functionalized by grafting with a carboxylic acid or a derivative thereof.

30 12. The method as claimed in any one of claims 1 to 11, wherein before the polymer film is applied to the steel sheet, it undergoes a corona discharge or flame treatment.

35 13. The method as claimed in any one of claims 1 to 12, wherein the steel sheet is subjected to a prior surface treatment to improve the adhesion of the polymer film to the sheet.

14. A part which can be obtained by the fabrication method as claimed in any one of claims 1 to 13.